

were obliged to kill the young ones, as they would not eat. Whilst in the cage, the old bird whistled, every now and then, its clear, peculiar call-note.

I have often seen these birds poised in the air, almost stationary, with their wings quivering rapidly, after the manner of some Kingfishers, for perhaps a minute or two at a time, after which they would shoot down suddenly to the earth, and bear off in triumph the victim of these operations, which, I imagine, must have been some insect. A friend of mine saw one of them engaged in devouring a large beetle; so that the story of their living exclusively on ants cannot be true. They are, apparently, inquisitive birds; for whenever I approached one of them, he stretched out his neck, and, figuratively speaking, stood on his "tip-toes" to have a better look at me. I found them exceedingly tenacious of life, requiring a deal of killing for so small a bird. The origin of the sobriquet "Mocking-bird," which, I believe, is shared by some others of the Saxicolinæ, I have been unable to discover. I have never heard any mimicry in its notes, though it will readily answer if whistled to.

10. On the Species of *Hyrax* inhabiting Abyssinia and the Neighbouring Countries. By WILLIAM T. BLANFORD, C.M.Z.S.

During the last two years Dr. Gray has described, from specimens in the British Museum, four new species of *Hyrax* from Abyssinia. Two of these, *H. Brucei* and *H. alpini*, were described in 1867, before the Abyssinian expedition (Ann. & Mag. Nat. Hist. ser. 4. vol. i. pp. 44, 45); and two other species, one belonging to each of the proposed genera *Euhyrax* and *Dendrohyrax*, were also shown to have been brought from southern Abyssinia.

My attention was thus drawn to the subject of the Abyssinian *Hyraxes* just when starting for the expedition. During the time spent in Abyssinia, I had many opportunities of collecting and observing these animals; and the first few specimens obtained exhibited such an unusual amount of variation, that I endeavoured to procure as large a series as I could. I collected altogether twenty-eight specimens from various localities, about twenty of which are now in the British Museum; and these enable me, I think, to throw some light upon the specific characters. Since returning from Abyssinia I have had opportunities of examining both Dr. Gray's types in the British Museum and the specimens now in the Berlin Museum described by Hemprich and Ehrenberg in the 'Symbolæ Physicæ.' Meantime Dr. Gray had described as new *H. ferrugineus* and *H. irrorata*, with a variety named *luteogaster* considered to be probably also distinct, from specimens brought from Abyssinia by my friend Mr. Jesse.

Of the specimens obtained by me, one was shot on the shores of Annesley Bay; three in the passes leading to the highlands, at heights of 2000 to 4000 feet above the sea; two at Senafé, 8000 feet; a series

of seventeen of all ages at Adigrat, also at about 8000 feet (these were procured by a collector whom I left with especial instructions to shoot and preserve as many as he could); one at Agula, 7000 feet; one near Antalo, 7000 feet; two on the Wadela plateau, at above 1000 feet; and one in the Anseba valley near Bogos, at about 4000 feet above the sea.

The specimen shot at Annesley Bay differs from all the others in its short rather harsh fur and apparently small size. It is immature, but seems smaller than specimens of similar age from the highlands; and other individuals seen about the same burrow were equally small. Except in size, this specimen agrees very fairly with the type of *Hyrax abyssinicus** of Hemprich and Ehrenberg; for it has a rudimentary black dorsal spot, a character which appears usually more developed in adult or aged specimens than in the young. It, however, has not the smallest resemblance to the skins from Shoa in the British Museum identified by Dr. Gray with that species, but which certainly belong to a different species, much larger in size, and with very long soft hair instead of the short harsh fur of *H. abyssinicus*.

Whether my specimen be correctly referred to *H. abyssinicus* of Hemprich and Ehrenberg or not, there can be but little doubt that this species is a well-marked form inhabiting the shores of the Red Sea, and that Dr. Gray is right in separating from it the common *Hyrax* of the Abyssinian highlands with a yellow dorsal spot.

It is on the species inhabiting the highlands that my specimens throw most light. The characters mainly relied upon for the discrimination of the species of *Hyrax* are the colour of the dorsal spot, the colour and texture of the fur, and the form of the skull. In all these characters there is so much variation that I am not in the least surprised that Dr. Gray should have considered that there were several species indicated by the few skins to which he had access. I cannot, however, quite coincide in this opinion. For some time I thought that I could distinguish two species amongst my collections—one with a well-marked yellow dorsal spot, the other with the same rudimentary or wanting (*H. irroratus*, Gray). But further examination showed that those specimens in which the dorsal streak is entirely absent are immature, and that in the adult it is always slightly indicated; and there is a perfect transition from the merest indication to a distinct well-marked yellow spot. The colour of the fur varies in the most singular manner, the principal distinction being in the greater or less amount of rufous; but that this is simply an individual character is shown by the circumstance that on several occasions I saw one or more rufous individuals (*H. ferrugineus*, Gray) amongst the ordinary dusky grey animals belonging to the same burrow, and also by the variation in the extent and shade of rufous, some skins having

* Hemprich and Ehrenberg write *habessinicus*; but the other spelling is that adopted by the older writers, such as Gmelin. The name Abyssinia being generally adopted from mediæval if not from classical Latin, it seems unnecessary to change it, although the true name of the country is Habesh.

only the head or back thus coloured, while in others it extends more or less throughout. Even the texture of the fur is variable, some specimens being rather harsher than others. One of my skins, which appears to differ conspicuously from all the others in its excessive softness and grey tint, is only distinguishable from a specimen of *H. brucei* in the British Museum by its greyer colour and rather longer fur. Other specimens collected by me are perfectly intermediate between the types of *H. brucei* and *H. alpini*, while others completely connect the first named with the two species described by Dr. Gray from Mr. Jesse's collections. I am therefore obliged to conclude that these species are founded on characters which, however apparently marked, are in reality only individual and not specific.

The only skins which I am inclined to consider possibly distinct from *H. brucei* are one from Adigrat and two from Wadela. These may possibly be varieties of the same species, as all have a rudimentary black dorsal spot. The first specimen is of a very dark brown colour much mottled with black, all the under-fur near the skin being blackish; the hairs are yellowish brown near the end and tipped with black. The skull is crushed and I have not extracted it.

In the two specimens from above 10,000 feet elevation the fur is also dark, long, and moderately fine, with much less mottling than usual. The soles of the feet, of the hinder ones especially, appear very short. The nasal bones of the skull appear shorter. This of course is a character varying with age; but the comparison is made between skulls of similar development. The zygomatic arch is broader and the series of molar teeth in the upper jaw is very much curved in the Wadela specimens; and in one of them, in which all the hinder molars are well grown, although not worn, the foremost premolar is wanting on each side of both jaws. This tooth is frequently wanting here and there in skulls of *H. brucei* and is usually deficient in the lower jaw of aged specimens; but amongst eight adult skulls which I examined, I could find no instance of its absence throughout both jaws.

I do not think these skins belong to the same species as the specimens from Shoa already mentioned (*Euhyrax abyssinicus*, Gray); they appear to me to belong to a much smaller animal, and the colour and texture of the fur are dissimilar. I think they probably belong to an undescribed form. I shall not, however, attempt to name it on the evidence of only two skins.

With regard to the Abyssinian *Dendrohyrax* I can say nothing. Dr. Gray only indicates its existence from a portion of an Abyssinian skull figured by v. Jaeger. I have already shown that *Euhyrax abyssinicus*, Gray, is not *Hyrax abyssinicus* of Hemprich and Ehrenberg. Dr. Gray states that the skin of *E. abyssinicus* is not distinguishable from that of *Hyrax capensis*, but that the skull differs in the length of the diastema or space between the upper cutting-teeth and the first premolar of the upper jaw, which is very much greater

in *Eukhyrax*, being more than the length of the outer sides of the first three premolars, whilst in *Hyrax* it is less*.

It is only with the greatest diffidence that I venture to offer an opinion on a subject with which I have so very small an acquaintance as osteology; but I cannot help thinking that if the difference in question be really of generic importance, it is remarkable that there are no external characters in addition; and, so far as my own specimens enable me to judge, the length of the diastema in *Hyraxes* is a very variable character. That it differs enormously with age is a matter of course, but I am now speaking of adult skulls. In two from Adigrat, the lengths are as follows in decimals of an inch:—

	I.	II.
Length of diastema	0·35	0·45
Length of first three premolars.	0·48	0·48

In these two, both aged specimens, the development of the teeth is precisely similar. The skins only differ in one being more ferruginous than the other, a character certainly of no importance. Other skulls show intermediate proportions in the length of parts of the jaw.

I am inclined to conclude that the differences pointed out by Dr. Gray may be of specific value, but that, where so much variation exists within the limits of a single species, it can scarcely take generic rank. But, as I have already stated, my knowledge of osteology is insufficient to enable me to judge fully on this subject; and as I may be falling into the not uncommon error of underestimating the importance of characters to which I have not given much study, I can only leave the matter in the hands of those better acquainted with them. Meantime, if the Shoa animal be really distinguishable from *H. capensis*, it will require a name.

The only remaining observation I can add is, that, by examination of the specimens in both cases, I have ascertained that the species described by Dr. Gray as *Hyrax burtoni* is identical with the type in the Berlin Museum of Hemprich and Ehrenberg's *H. ruficeps* vel *dongolanus*. As the former name is objectionable, the rufous head being apparently an individual peculiarity, I would suggest that the latter be retained.

The following, therefore, appears to me to be the synonymy of the *Hyraxes* hitherto described as inhabiting North-eastern Africa. The species indicated above may have to be added, and also, if Dr. Gray's suggestion be correct, *H. (Dendrohyrax) dorsalis* or an allied form. But the last identification is only based as yet on a figure of part of a skull.

* In Cat. Carn., Pachyd., and Edent. Mamm. in Brit. Mus. 1869, p. 289, Dr. Gray says, "in the *H. brucei* it (the diastema) is as long as the length of the outer sides of the first three premolars and the half of the fourth one; in *H. capensis* it is only as long as the outer sides of the first two premolars and one-third of the third one." From the context it is evident that *H. brucei* is a misprint for *Eukhyrax abyssinicus*. I have not access at present to the 'Annals' in which the description originally appeared.

I. *Dorsal streak black.*a. *Fur harsh, mottled; size moderate.*

1. HYRAX ABYSSINICUS.

H. habessinicus, Hemp. & Ehr. Symb. Phys. pl. 2. f. 2 (the smaller specimen only).*Hab.* Shores of Red Sea near Massowa and Annesley Bay.b. *Fur soft, long; size large.*

2. H. CAPENSIS?

Euhyrax abyssinicus, Gray, Ann. & Mag. Nat. Hist. ser. 4. vol. i. p. 47.*Hab.* Shoa, Southern Abyssinia.II. *Dorsal streak yellow.*a. *Fur soft, variable in colour, but usually dark brownish grey or brown, and mottled.*

3. H. BRUCEI.

*Ashkoko** of Bruce, Travels, vol. v. p. 139.*Gike* of Salt.*Hyrax brucei* and *H. alpini*, Gray, Ann. & Mag. Nat. Hist. for 1868, ser. 4. vol. i. pp. 44, 45; Cat. Carn. Mamm. in Brit. Mus. 1869, p. 287.*H. ferrugineus*, *H. irroratus*, and *H. irroratus* var. *luteogaster*, Gray, Ann. & Mag. Nat. Hist. 1869, ser. 4. vol. iii. p. 242; Cat. Carn. Mamm. Brit. Mus. 1869, p. 288.*H. abyssinicus*, auct. nec Hempr. et Ehr.*Hab.* Highlands of Tigré in northern Abyssinia, above 2000 feet.b. *Fur harsh, yellowish brown; size moderate.*

4. H. DONGOLANUS.

H. ruficeps vel *dongolanus*, Hempr. & Ehr. Symb. Phys. Mamm. t. 2. fig. 1.*H. burtoni*, Gray, Ann. & Mag. Nat. Hist. 1868, ser. 4. vol. i. p. 43; Cat. Carn. Mamm. in Brit. Mus. 1869, p. 285.*Hab.* Dongola (*H. § E.*); Egypt (*Burton*).*H. syriacus*, Schreb. (*H. sinaiticus*, H. & E. and Gray), approaches *H. dongolanus* in colour, being dull isabelline with a large pale dorsal spot, but the fur is soft. It inhabits Palestine, Syria, and Northern Arabia. No species of *Hyrax* appears to have been as yet procured from Southern Arabia.* *Ashkoko* is Amharic, *Gike* Tigré or Geez; the former the language of South Abyssinia, Amhara and Shoa, the latter of Northern Abyssinia or Tigré.